Assigned reading: Chapters 18, 20 of Gallian.

Recommended practice questions: Chapter 20 of Gallian, exercises 3, 5, 8, 9, 10, 21

Assigned questions to hand in:

(1) (Gallian Chapter 20 #2) Show that $\mathbb{Q}(\sqrt{2}, \sqrt{3}) = \mathbb{Q}(\sqrt{2} + \sqrt{3})$.

(2) (Gallian Chapter 20 #5) Find the splitting field of $x^4 + x^2 + 1 = (x^2 + x + 1)(x^2 - x + 1)$ over $\mathbb{Q}$.

(3) (Gallian Chapter 20 #11) Describe the elements in $\mathbb{Q}(\pi)$.

(4) (Gallian Chapter 20 #18) Describe $(3 + 4\sqrt{2})^{-1}$ in the form $a + b\sqrt{2}$, where $a, b \in \mathbb{Q}$. 